

حمل الآن

مجانا وحصريا

المراجعة رقم (1)

الترم الثاني



Summary

Lesson 1 Artificial Intelligence Applications

- » **Narrow AI:** It focuses on specific tasks, such as face recognition or language translation.
- » **General AI (GAI):** It can perform any human tasks, think, innovate, and adapt.
- » **Super AI (SAI):** It is the most advanced; it can solve complex problems and discover new things.

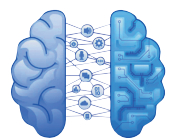
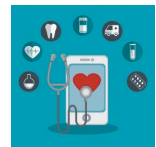
Key Points:

» Applications of AI in Daily Life: سلسلة كتب الاستاذ

- 1 **Personal Assistant:** Like Siri or Alexa, They use AI to understand and perform commands.
- 2 **Smart Games:** Video games use AI to make games fun and challenging.
- 3 **Smart Cars:** Self-driving cars are enabled by AI.
- 4 **Digital Doctors:** AI aids in faster and more accurate medical diagnoses. سلسلة كتب الاستاذ
- 5 **Instant Translator:** AI translates languages in real-time.
- 6 **Smart Shopping:** AI suggests products based on previous purchases.

» Fields of Artificial Intelligence:

- 1 **Machine Learning:** AI learns from data and experiences.
- 2 **Natural Language Processing (NLP):** AI understands, interprets, and speaks human language.
- 3 **Computer Vision:** AI analyzes and understands visual information.





- ④ **Robotics:** AI-powered robots perform various tasks.
- ⑤ **Expert Systems:** AI solves complex problems and make decisions.
- ⑥ **Deep Learning:** AI learns complex tasks using neural networks.

» Creating Intelligent Models with Teachable Machine:

- **Teachable Machine:** It is a tool for creating models to recognize images, sounds, and movements.
- **Model Building Training:** Teaching AI by showing it examples is similar to teaching a child.

Lesson 2 Sensors

Definition:

- » **Sensors:** They are devices that sense changes in the environment and convert them into signals for machines to understand and make decisions.

Key Points:

» How Sensors Work:

- ① **Sensing:** They capture information (heat, light, and sound).
- ② **Signal Conversion:** They convert information into electrical signals.
- ③ **Transmission:** They send signals to display results or perform operations.

» Importance of Sensors for Robots:

- **Function:** Sensors act as the “senses” of robots, helping them see, hear, sense, and touch.

» Types of Robotic Sensors:

- ① **Distance Sensors:** They measure the distance to avoid collisions.
- ② **Light Sensors:** They adapt to changing light conditions.
- ③ **Sound Sensors:** They respond to voice commands.
- ④ **Motion Sensors:** They detect movement and direction changes.



5 **Special Sensors:** They measure temperature and humidity.

» Examples of Devices Using Sensors:

1 **Vacuum Cleaner Robot:** It avoids obstacles.

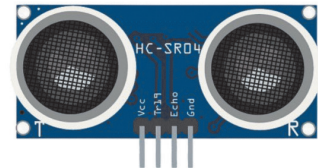
2 **Surgical Robot:** It uses precise sensors to perform surgeries.

3 **Self-Driving Cars:** They see the road and make decisions.

» Types of Distance Sensors:

1 **Ultrasonic Sensors:** They emit high-frequency sound waves to measure distance.

– **Examples:** Vacuum cleaner robots, parking systems, and fluid level measurement



2 **Laser Rangefinders:** They emit laser beams for high accuracy.

– **Examples:** 3D laser scanners, ground scanning systems, and industrial measurement



3 **Visible Light Sensors:** They use digital cameras to analyze images.

– **Examples:** Self-driving car cameras, industrial vision systems, and augmented reality systems

4 **Infrared Sensors:** They emit infrared rays, then receive the returning rays.

» They are widely used in consumer electronics.

– **Examples:** Remote controls, and non-contact thermometers



5 **Time of Flight Sensors:** They measure the light pulse travel time.

– **Examples:** 3D sensors, and motion tracking systems

» Factors for Choosing Sensors:

1 **Required Range:** The maximum distance to measure

2 **Required Accuracy:** The measurement precision needed

3 **Operating Environment:** Conditions like lighting, temperature, and humidity.

4 **Cost:** Device and installation expenses.



»» Daily Applications of Sensors:

- 1 **Smartphones:** Taking pictures, adjusting lighting, determining locations
- 2 **Modern Cars:** Measuring speed, warning of collisions, assisting in parking
- 3 **Smart Homes:** Motion sensors for automatic lighting
- 4 **Phone Microphone:** Converting sound to electrical signals
- 5 **Motion Sensors in Games:** Detecting phone tilts
- 6 **Touch Screen:** Sensing finger touches

Lesson 3 Robots

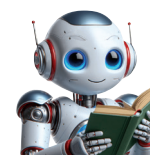
Definition:

- »» **Robot:** It is a device programmed to automatically perform specific tasks, capable of moving, sensing, and interacting with its surroundings.

Key Points:

»» Types of Robots:

- 1 **Industrial Robots:** They are used in factories for precise tasks, e.g., car production.
- 2 **Home Robots:** They are found in homes, e.g., Roomba for cleaning floors.
- 3 **Medical Robots:** They assist in surgeries with high accuracy.
- 4 **Educational Robots:** They are used in schools to teach programming, e.g., LEGO Mindstorms.



»» Robot Components:

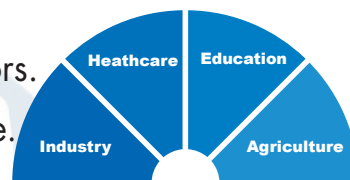
- 1 **Structure:** It is the main part carrying all components, made of materials like metal, plastic, or carbon.
- 2 **Sensors:** They are the senses of the robot, e.g., sound sensors and cameras.
- 3 **Motors:** They move parts of a robot, so it can move and execute commands, e.g., electric motors and pneumatic motors.



- ④ **Controller:** It is the “brain” of the robot, processes data and issues commands.
- ⑤ **Power Source:** It can be batteries, solar cells, or direct electrical power source.
- ⑥ **Software:** It makes the robot “smart,” includes algorithms for responses.
- ⑦ **Communication Tools:** They interact with users or other robots, e.g., Bluetooth and Wi-Fi.

» Areas of Use of Robots:

- ① **Industry:** They improve productivity, reducing errors.
- ② **Healthcare:** They assist in surgeries and patient care.
- ③ **Education:** They provide interactive learning.
- ④ **Agriculture:** They are used in precision farming to increase crops and reduce waste.



» Challenges:

- ① **Safety:** The need to ensure the safety of robots during work.
- ② **Employment:** Concerns that they can replace human labor.
- ③ **Ethics:** Impact on society.

» Benefits:

- ① **Increased Efficiency and Productivity:** They can do continuous work without fatigue or interruption.
- ② **High Accuracy and Reduced Errors:** They are precise in tasks, like surgeries and electronics assembly.
- ③ **Safety and Security:** They can perform dangerous tasks and handle heavy weights and hazardous materials.
- ④ **Adaptability and Diversity:** They perform various tasks efficiently. Ex: home robots and educational robots
- ⑤ **Reduced Costs:** They provide long-term cost savings by reducing human labor or errors, and achieving accuracy.
- ⑥ **Contributing to Development:** They encourage technological advancements, e.g., space exploration and medical research.



Lesson 4 Scratch

Definition:

- » **Scratch Program:** It is a visual and easy-to-use educational tool for learning programming through games, animations, music, and more.



Key Points:

» Scratch Program Features:

- 1 **Simple Interface:** It uses and orders visual blocks to form programs.
- 2 **Educational:** It is designed to teach basic programming concepts in a fun way.
- 3 **Free:** It is available for download from its official website for free.
- 4 **Creative Thinking:** It develops skills in creative thinking and problem-solving.
- 5 **Problem-solving Skills:** It solves problems in a logical way.
- 6 **Collaboration:** It enhances teamwork skills.
- 7 **Foundation:** It provides a strong start for learning more complex programming languages.
- 8 **Sharing:** Its projects can be shared with others.

» Program Interface:

- **Menu Bar**
- **Command Blocks Area**
- **Script Area:** It collects programming sections.
- **Stage Area:** It shows project results.
- **Sprite Object**
- **Sprites Area:** It contains the project's objects.

» Coordinates:

- **Determine Coordinates:** X=..... (horizontal), Y=..... (vertical)
- **Change Coordinates:** Drag and drop the sprite to a new position.



» Implement the project:

- To execute the project, click on the icon .
- To stop the execution of the project, click on the icon .

» Saving the Project:

- File Menu: Choose "Save to your computer".
- The file extension is **Sb3**.

Lesson 5 Sprites Area in Scratch

Definition:

» **Sprites Area:** It contains the sprites used in the project.

Key Points:

» Sprites Area Features:

- 1 **Name:** It is modified by clicking and renaming.
- 2 **Location:** It determines the sprite's position (X, Y values).
- 3 **Direction:** It changes the sprite's movement direction.
- 4 **Visibility:** It shows or hides the sprite.
- 5 **Size:** It changes the sprite's size.
- 6 **Delete:** It removes the sprite.
- 7 **Add:** It is used to choose a new sprite.

» Adding a New Sprite:

- Choose Sprite: Select Basketball.
- Remove: Delete the cat sprite.

» Project 2: Moving the Ball

- **Objective:** To move the ball randomly, make a sound, repeat 10 times.

» Steps:

- 1 **Motion:** Choose "Go to random position".
- 2 **Sound:** Choose "Play sound".
- 3 **Control:** Choose the "Repeat" command.
- 4 **Events:** Choose the "When Clicked" command.



»» Project 3: Spaceship

– **Objective:** To move a spaceship randomly, make a sound, change size, repeat 5 times, start from (0, 0).

– **Steps:**

- 1 **Insert Sprite:** Add Rocketship.
- 2 **Remove:** Delete the cat sprite.
- 3 **Background:** Choose "Space".

»» Square Drawing Project:

- 1 **Open Project:** Start a new project.
- 2 **Select Pen:** Drag the "pen" block to start drawing.
- 3 **Set Color and Size:** Use "Set Pen Color to" and "Set Pen Size to" blocks.
- 4 **Move the Pen:** Use "Go to x:y:" blocks to draw lines.
- 5 **Repeat the Steps:** Draw more lines to form shapes.

»» Drawing a circle:

»» Use the "Repeat" block to repeat the process of drawing short lines at different angles.

»» Notes:

- 1 **Drawing Shapes:** Set start and end points for lines.
- 2 **Adding Details:** Add features like eyes, mouth, and ears.

Lesson 6 Principles of Python

Definition:

»» **Python:** It is a programming language widely used in data science, machine learning, and web development.





Key Points:

»» Features of Python:

- 1 **Open Source:** It is free and open for everyone to use and develop.
- 2 **Interpreted Language:** It translates codes line by line, making error detection easier.
- 3 **Versatility:** It is used in web development, data science, AI, machine learning, and game programming.
- 4 **Easy-to-Use:** It is simple and organized, with syntax similar to English.
- 5 **Integration:** It can be integrated with languages like C, C++, and Java.
- 6 **Libraries:** Numerous libraries are available for various tasks.

»» Python Libraries:

- »» **NumPy:** It is used in data science, statistics, and AI.
- »» **Pandas:** It is used for data analysis and processing.
- »» **Matplotlib:** It is used for creating graphs and charts.

»» How to Download Python:

- 1 **Visit:** Go to the official Python website www.python.org.
- 2 **Choose Download:** Select the download option.
- 3 **Select System:** Choose your operating system (Windows, Mac, or Linux).
- 4 **Choose Bit Version:** Select 64-bit or 32-bit based on your device specifications.
- 5 **Install:** Download and install the program, following the instructions.

Lesson 7 Variables in Python

Definition:

- »» **Variables:** They are reserved places in memory to store values that can change during program execution.



Key Points:

»» Conditions for Naming Variables in Python:

- 1 Start with a letter or underscore (_).
- 2 Contain letters (A-Z), numbers, or underscore (_).
- 3 Avoid reserved words.

»» Types of Variables in Python:

- 1 **Numbers:** To store numerical values.

- **Integer Variables (int):** $X = 5$, $Y = 10$
- **Decimal Variables (float):** $Z = 5.25$, $A = 8.32$

- 2 **Strings:** To store texts, enclosed in single or double quotes.

– **Examples:** `Name = "Taher"`, `City = 'Cairo'`

- 3 **Booleans:** They contain only two values, True or False.

– **Examples:** `Is_taher_student = False`, `Is_taher_a_teacher = True`

»» Python Program Interface:

- 1 **Interactive Python Interface (Python Shell):** It is used to write and execute simple codes directly.

– It is automatically installed when you install the language.

- 2 **Text Editor:** It is used to write longer, complex codes and save them for later execution.



»» Using the type () Function:

– **Purpose:** To determine the type of a variable.

»» Simple Python Code Using Variables:

– **Print Function:** It displays text, variables, or results of mathematical operations on the output screen.

كيفية طباعة صفحات معينة من ملف معين

مثلا ازاي نطبع الصفحات من صفحة 4 الى صفحة 9



خطوة 1



خطوة 2
اختيار اسم
الطابعة
بتاعتك

خطوة 3
كتابة الصفحات
المراد طباعتها
نكتب رقم 4 ثم
نكتب الشرطة
دي - ثم نكتب 9

خطوة 4
اختيار نوع الورق



خطوة 5
اختيار A4



خطوة 6

حمل الآن

مجاناً وحصرياً

المراجعة رقم (2)

الترم الثاني



Lesson (1) : Artificial Intelligence applications

Artificial Intelligence (AI) is a vast field that is like a garden full of various flowers, where each flower has a different shape and color. Similarly, AI comes in many types and has countless applications in our daily lives.

**Types of Artificial Intelligence****1. Narrow Artificial Intelligence (NAI):**

This type of AI is characterized by its focus on **performing specific tasks**.

EXAMPLE

- ➔ Face recognition programs.
- ➔ Language translation tools.
- ➔ A robot that plays chess brilliantly but cannot perform other tasks.

2. General Artificial Intelligence (GAI):

More advanced **AI** that can perform **any task** that a human can perform.

EXAMPLE

- ➔ Robots that think, create, solve complex problems, and adapt to different situations, completely imitating human capabilities.

3. Super Artificial Intelligence (SAI):

The **most advanced AI**, capable of solving problems beyond human **capabilities** and **discovering** unimaginable innovations.



Applications of AI in Daily Life



1. Personal Assistant:

- ➔ Tools like **Siri** or **Alexa** act as virtual friends, understanding and executing commands.



2. Smart Games:

- ➔ Video games use **artificial intelligence** to provide an enjoyable experience and increasing challenges as characters learn from their mistakes.



3. Smart Cars:

- ➔ Self-driving cars, a dream of the future that is getting closer to becoming a reality thanks to **AI**



4. Digital Doctors:

- ➔ Artificial intelligence helps doctors diagnose and treat diseases quickly and accurately.



5. Instant Translator:

- ➔ AI facilitates communication by translating words and sentences between languages instantly.



6. Smart Shopping:

- ➔ Shopping sites use AI to analyze user behavior and suggest products that suit their preferences.

**Artificial Intelligence Fields****1. Machine Learning:**

- ➔ AI learns from data and experiences, just as humans learn from their mistakes.

EXAMPLE

- ➔ Training AI to recognize cats by showing it multiple images.

2. Natural Language Processing (NLP):

- ➔ AI understands human languages and interacts with them in writing or speech.

EXAMPLE

- ➔ Virtual assistants or smart chat.

3. Computer Vision:

- ➔ AI interprets visual data to identify objects, faces, and patterns.

EXAMPLE

- ➔ Recognizing faces in images.

4. Robotics:

- ➔ Robots powered by AI perform tasks such as cleaning, surgery, or playing chess, even in dangerous environments.

5. Expert Systems:

- ➔ AI mimics human thinking to make decisions and solve complex problems.

EXAMPLE

- ➔ Diagnosing diseases using artificial intelligence.

6. Deep Learning:

- ➔ A branch of AI that aims to simulate human learning through neural networks.

EXAMPLE

- ➔ Systems that learn to recognize sounds, images, or patterns very quickly.

Create Smart Models with Teachable Machine

Teachable Machine is an easy-to-use tool that lets you create smart AI models that recognize images, sounds, and movements.

**Steps to use:**

1. Visit the Teachable Machine website.
2. Make sure your browser is up to date (preferably Microsoft Edge).
3. Try training AI models in collaboration with your colleagues.

Lesson (2) :**Sensors: The Technology Behind Modern Devices**

What are sensors? Sensors are devices designed to sense changes in the environment and convert those changes into signals that machines can understand. These signals help machines respond appropriately, making sensors the "eyes and ears" of technology.

**How do sensors work?**

Sensors work in three main steps:

1. **Sensing:** Captures information from the surrounding environment such as heat, light, or sound.
2. **Signal conversion:** Converts this information into electrical signals.

- 3. Transmission:** The signals are sent to another device to display the results or perform a certain operation (such as displaying the temperature on a digital screen).



The Importance of Sensors for Robots:

- ➔ Without sensors, robots would be like people walking with their eyes covered, unable to recognize or interact with their surroundings. Sensors are a robot's "senses," allowing it to see, hear, and feel things around it.



Types of Robot Sensors

1. Distance sensors:

- ➔ Measure the distance to obstacles, helping the robot avoid collisions.

2. Light sensors:

- ➔ Adapt to different lighting conditions, and are used in home robots.

3. Sound sensors:

- ➔ Detect sounds and respond to voice commands.

4. Motion sensors:

- ➔ Detect movement and help with navigation.

5. Special sensors:

- ➔ Measure specific parameters such as temperature and humidity.

Applications of Sensors in Everyday Devices

1. **Vacuum cleaning robots:** use sensors to avoid obstacles and clean.
2. **Surgical robots:** rely on precise sensors to perform operations.
3. **Self-driving cars:** use sensors to navigate, detect obstacles, and make decisions.
4. **Smartphones:** help in photography, adjusting lighting, and determining locations.
5. **Smart homes:** motion sensors automatically turn on the lights when you enter a room.
6. **Gaming devices:** sensors change the direction of the game based on the device's movements.



Types of sensors

1. Ultrasonic sensors:

- ➔ **How they work:** They emit high-frequency sound waves and receive the reflected waves to determine the distance.

EXAMPLE

- ➔ Robotic vacuums to avoid obstacles.
- ➔ Parking systems to determine distances.
- ➔ Determining fluid levels in tanks.



2. Laser rangefinders:

- ➔ **How they work:** They emit a laser beam and determine the time it takes for it to return, providing high accuracy.

EXAMPLE

- ➔ 3D scanning systems.
- ➔ Geological studies.

3. Visible light sensors:

- ➔ **How they work:** Cameras are used to analyze images and determine distances based on the size and distortion of the image.

EXAMPLE

- ➔ Self-driving car cameras.
- ➔ Industrial vision systems to inspect products.



4. Infrared sensors:

- ➔ **How they work:** They emit infrared rays and receive the reflected waves to identify objects.

EXAMPLE

- ➔ Remote controls.
- ➔ Non-contact temperature measuring devices (**thermometers**).



5. Time of flight sensors:

- ➔ **How they work:** They measure the time it takes for a light pulse to reach an object and return.

EXAMPLE

- ➔ 3D sensors for modeling objects.
- ➔ Motion tracking systems in games and virtual reality.



Factors for choosing the right sensor

- ➔ **Required range:** the maximum distance to be measured.
- ➔ **Required accuracy:** the level of accuracy required.
- ➔ **Operating environment:** lighting conditions, temperature, and humidity.
- ➔ **Cost:** the cost of the device and installation.

Lesson (3) :Robot

1. What is a robot?

- ➔ A **robot** is a device that can be programmed to perform specific tasks automatically.
- ➔ A **robot** is characterized by its ability to move sense (using sensors), and interact with the surrounding environment.
- ➔ **Robots** are used in many fields that require precision, speed, or safety.

EXAMPLE

- ➔ A **vacuum cleaner** that moves independently to clean the floor is a type of robot that works automatically.

2. Types of Robots

Robots vary according to their uses into several types:

1. **Industrial robots:** They are used in factories to perform tasks accurately and quickly, such as car production.
2. **Home robots:** They help perform household tasks, such as cleaning robots like "Roomba", which automatically clean floors.
3. **Medical robots:** They assist doctors in surgeries and other medical procedures with high accuracy.
4. **Educational robots:** They are used in schools to teach programming and technology, such as "**LEGO Mindstorms**" robots that are programmed to perform specific tasks and help students and teachers.

3. Areas of Use of Robots

Robots are used in many areas, including:

1. **Industry:** Improving productivity and reducing errors in manufacturing.
2. **Healthcare:** Assisting in surgeries and patient care, improving medical outcomes.

3. **Education:** Providing interactive learning experiences for students.
4. **Agriculture:** Improving crops and reducing waste through precision agriculture.

4. Robot Components:



1. Structure:

- ➔ The physical frame made of materials such as metal or plastic, which affects the weight and ability of the robot to move.



2. Sensors:

- ➔ The robot's "senses" that collect information, such as:
 - ✖ **Sound sensors:** Pick up sounds.
 - ✖ **Cameras:** Allow the robot to see.
 - ✖ **Temperature sensors:** Measure temperatures.



3. Motors (actuators):

Allow the robot to move.

Types include:

- ➔ **Electric motors:** For precise movements.
- ➔ **Air motors:** For heavy-duty tasks.



4. Control unit:

- ➔ The "**brain**" of the robot, which processes sensor data and directs movement using microprocessors.



5. Power source:

- ➔ Powers the robot. Sources include batteries, solar cells, or direct electricity.



6. Software:

- ➔ Determines the robot's behavior through algorithms, ranging from simple sensor programs to complex artificial intelligence systems.



7. Communication tools:

- ➔ **Enables the robot to** interact with users or other robots using technologies such as Bluetooth or Wi-Fi.

5. Benefits of Robots

Robots offer many advantages, including:

- ➔ **Increased efficiency:** Robots operate continuously, which increases productivity and saves time.
- ➔ **High accuracy:** They perform tasks accurately, which reduces human error, such as in surgical operations or the electronics industry.
- ➔ **Improved safety:** Robots take on dangerous tasks, such as dismantling bombs or handling hazardous chemicals, which reduces risks to humans.
- ➔ **Adaptability:** Robots can be programmed to perform different tasks,
- ➔ **Cost reduction.**
- ➔ **Boosting technological development:** Robots support innovation in areas such as space exploration and advanced medical research.

6. Challenges

Despite their benefits, robots face some challenges:

- ➔ **Safety issues:** The need to ensure that robots are safe while working.
- ➔ **Employment concerns:** The potential for robots to replace human labor.
- ➔ **Ethical concerns:** The impact of robots on society and decision-making.



Conclusion

- ✍ **Robots** are revolutionizing industries and everyday life by improving efficiency, safety, and accuracy.
- ✍ From home assistants to advanced medical devices, robots show tremendous potential in shaping the future of technology.

Lesson (4): Scratch

Scratch Program: It is a visual and easy-to-use educational tool for learning programming through games, animations, music, and more.

**Scratch Program Features:****1- Simple Interface:**

- ✍ It uses and orders visual blocks to form programs.

2- Educational:

- ✍ It is designed to teach basic programming concepts in a fun way.

3- Free:

- ✍ It is available for download from its official website for free.

4- Creative Thinking:

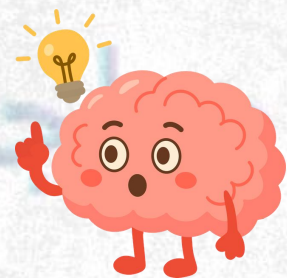
- ✍ It develops skills in creative thinking and problem-solving.

5- Problem-solving Skills:

- ✍ It solves problems in a logical way.

6- Collaboration:

- ✍ It enhances teamwork skills.



7- Foundation:

- ✍ It provides a strong start for learning more complex programming languages.

8- Sharing:

- ✍ Its projects can be shared with others.

**Program Interface:**

- ➔ Menu Bar
- ➔ Command Blocks Area
- ➔ Script Area: It collects programming sections.
- ➔ Stage Area: It shows project results.
- ➔ Sprite Object
- ➔ Sprites Area: It contains the project's objects.

Coordinates:

- ➔ Determine Coordinates: X-..... (horizontal), Y=..... (vertical)
- ➔ Change Coordinates: Drag and drop the sprite to a new position.

Implement the project:

- ➔ To execute the project, click on the icon 
- ➔ To stop the execution of the project, click on the icon 

Saving the Project:

- ➔ File Menu: Choose "Save to your computer".
- ➔ The file extension is **Sb3**.

Lesson (5) : Sprites Area in Scratch

**Sprites Area**

- ➔ It contains the sprites used in the project.
- ➔ The sprites used in the project appear as follows:

1- Name of the sprite:

- ➔ You can modify it by clicking on it and renaming it

2- Location of the sprite:

- ➔ It determines the position using the horizontal axis (X value) and the vertical axis (Y value).
- ➔ **Note:** the current location of the sprite (cat) on the platform is (60,0).

3- Direction of the sprite's movement:

- ➔ You can change the direction by changing the Direction value.

4- Show or hide the sprite on the platform.**5- Size of the sprite:**

- ➔ The value can be changed.

6- Delete the sprite from the platform.

7- Add a new sprite:

➔ Choose Sprite.

Adding a New Sprite:

➔ **Choose Sprite:** Select Basketball.

➔ **Remove:** Delete the cat sprite.

Project 2: Moving the Ball

➔ **Objective:** To move the ball randomly, make a sound, repeat 10 times.

**Steps:**

1. **Motion:** Choose "Go to random position".
2. **Sound:** Choose "Play sound".
3. **Control:** Choose the "Repeat" command.
4. **Events:** Choose the "When Clicked" command.

Project 3: Spaceship

➔ **Objective:** To move a spaceship randomly, make a sound, change size, repeat 5 times, start from (0, 0)

**Steps:**

- ➔ **Insert Sprite:** Add Rocketship.
- ➔ **Remove:** Delete the cat sprite.
- ➔ **Background:** Choose "Space",

Square Drawing Project:

1. **Open Project:** Start a new project.
2. **Select Pen:** Drag the "pen block to start drawing.

3. **Set Color and Size:** Use "Set Pen Color to" and "Set Pen Size to" blocks.
4. **Move the Pen:** Use "Go to x:y: blocks to draw lines.
5. **Repeat the Steps:** Draw more lines to form shapes.

Drawing a circle:

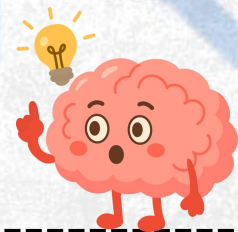
- ➔ Use the "**Repeat**" block to repeat the process of drawing short lines at different angles.

Notes:

- ➔ **Drawing Shapes:** Set start and end points for lines.
- ➔ **Adding Details:** Add features like eyes, mouth, and ears.



NOTES



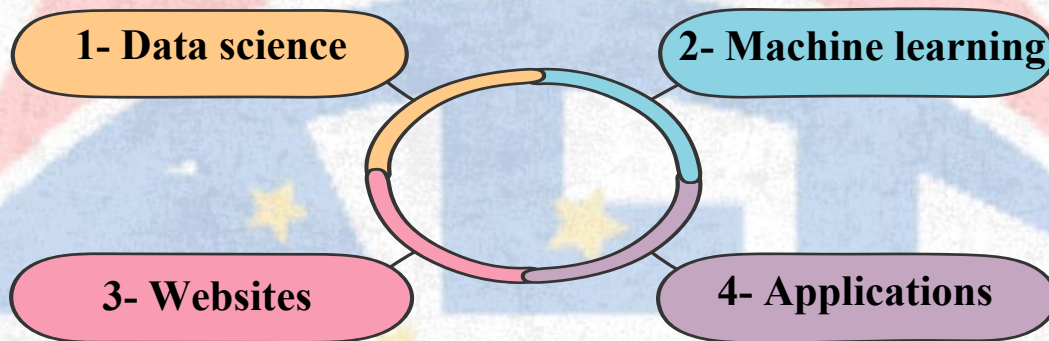
- ✍ **Drawing different shapes:** You can draw any geometric shape by setting the start and end points of the lines appropriately.
- ✍ **Adding details:** You can add details to your image, such as eyes, mouth, and ears.
- ✍ **Drawing a circle:** To draw a circle, you can use the Repeat block to repeat the process of drawing short lines at different angles. This helps with the circle drawing effect.

مراجعات النخبة

Lesson (6) : Principles of Python

**What is Python?**

- ✂ The first version of Python was released in 1991.
- ✂ **Python** is a programming language widely used in developing:

**Features of Python****1- Open source:**

- ➔ Python is free and open source, allowing everyone to use and develop it.

2- Interpreted language:

- ➔ It translates programming codes **line by line**, so if there are errors in the program code, it will stop working, allowing programmers to quickly find errors.

3- Versatility:

- ➔ It can be used in developing web applications, data science, artificial intelligence, machine learning, and game programming.

4- Easy-to-use language:

- ➔ It is one of the easiest programming languages for beginners because of:
 1. Its simple and organized syntax
 2. Using words similar to English.

5- Integration:

- ➔ Python can be integrated with other languages, such as C, C++, and Java, and it can also be used in developing multi-platform programs.

6- Libraries:

- ➔ Python has many libraries that you can use.



Python Libraries

- ➔ They are **pre-built codes** and **functions** that help programmers perform specific tasks without having to write codes from scratch.
- ➔ **Libraries** are a powerful tool that **increases** the efficiency and effectiveness of programming using **Python**, **providing ready-made** solutions to many **common problems or requirements**.



Examples of Python Libraries:

NumPy:

- ➔ It is widely used in data science, statistics, and artificial intelligence.

Pandas:

- ➔ It is used for analyzing and processing data.

Matplotlib:

- ➔ It is used for creating graphs and charts.

**How to Download Python:**

1. **Visit:** Go to the official Python website www.python.org
2. **Choose Download:** Select the download option.
3. **Select System:** Choose your operating system (Windows, Mac, or Linux).
4. **Choose Bit Version:** Select 64-bit or 32-bit based on your device specifications.
5. **Install:** Download and install the program, following the instructions.

Lesson (7) : Variables in Python**Variables**

In **programming languages**, a variable is a reserved space in memory used to store and save a specific value, where the value can change.

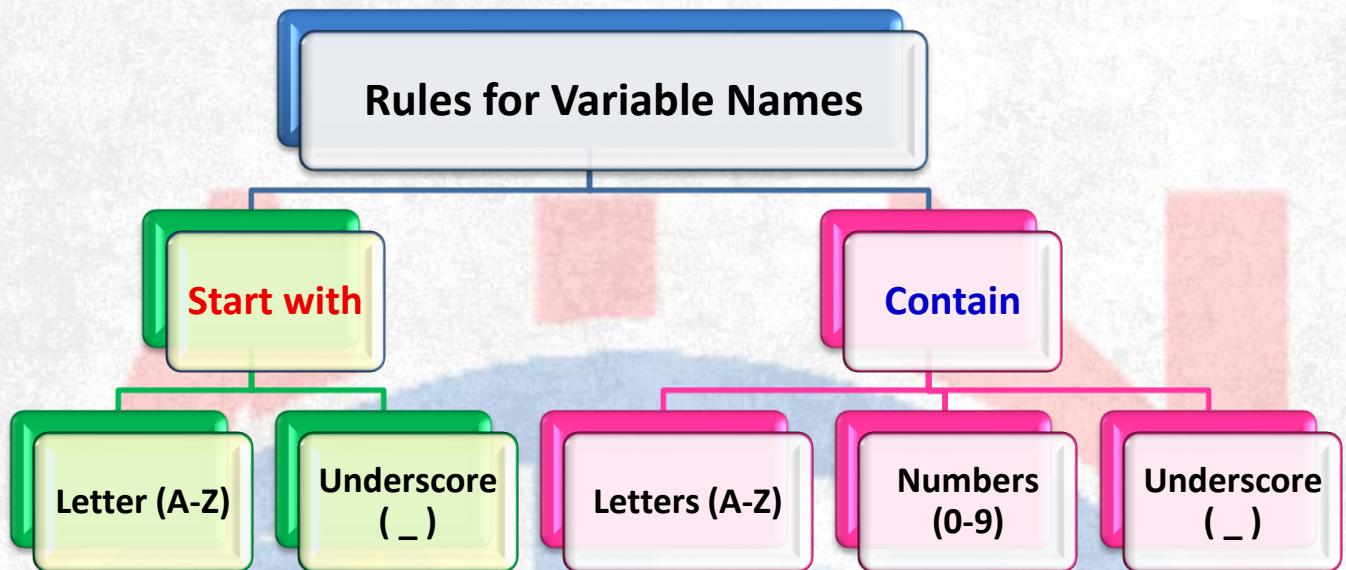
EXAMPLE

Taher = 20

- ➔ **Variable name:** Taher
- ➔ **Its value:** 20
- ➔ You can change the value of the variable while dealing with the program immediately during the execution of the program.



Conditions for Naming Variables in Python



NOTES

1- Reserved words may not be used in naming variables in Python because they express specific values that the program understands

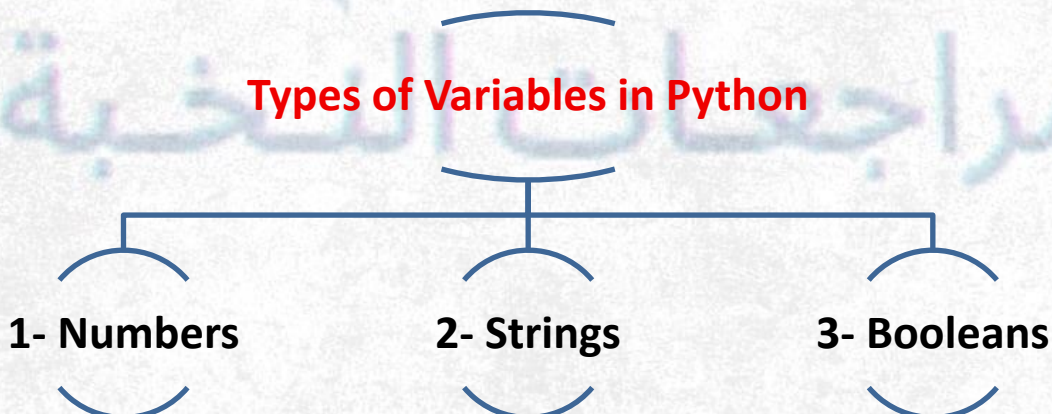
➔ **Example:** (**False**) is a reserved word that indicates a logical value within python.

2- When writing a variable name, you must take into account placing the variable names in upper and lowercase letters.

➔ **For example:** TAHER, Taher, tahir, TaheR

➔ In the previous example, the variable names refer to **4 variables** and not one variable.

Types of Variables in Python



1- Numbers:

- ➔ They are used to store **numerical values**, such as integers (int) and decimals (float).
- ➔ **Integer variables:** `X=5` `Y = 10`
- ➔ **Decimal variables:** `Z= 5.25` `A = 8.32`

2- Strings:

- ➔ They are used to store text, such as names and addresses.
- ➔ Texts are placed between single quotes `' '` or double quotes `" "`

Name `"Taher"` **City** `= 'Cairo'`

3- Booleans:

- ➔ They are a data type that contains only two values: **True** or **False**
- ➔ They are often used in comparisons and decision making in codes.

Is_taher_student `= False`

Is_taher_a_teacher `= True`



Python Program Interface

1- Interactive Python Interface (Python Shell):

- ➔ You can write **simple codes** and execute them **directly** to see the results.
- ➔ It is **installed automatically** when Python is installed; no need to download it.

2- Text Editor:

- ➔ It allows you to write longer and more complex codes.
- ➔ You can save codes to run them later.
- ➔ It must be downloaded from the Internet.
- ➔ **Examples:** Visual Studio, PyCharm



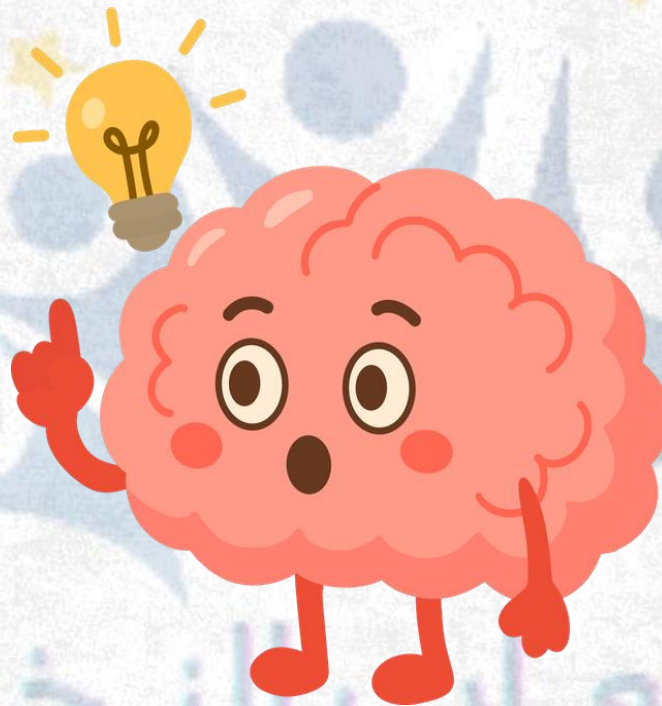
Using the type () Function:

- ➔ **Purpose:** To determine the type of a variable.



Simple Python Code Using Variables:

- ➔ **Print Function:** It displays text, variables, or results of mathematical operations on the output screen.



**Choose**

1. The challenges facing robotics technology include...
 - A. Increased reliance on paper documents.
 - B. Increased reliance on smartphones.
 - C. Safety, employment, and ethics.
 - D. Increased reliance on traditional machines.
2. You can save a Teachable Machine project on.....
 - A. Google Drive
 - B. your device
 - C. both a and b
 - D. none of them
3. Scratch helps enhance.....skills.
 - A. problem-solving
 - B. collaboration
 - C. creative thinking
 - D. all of them
4. In production, robots can perform repetitive tasks accurately and without any delay, which leads to:
 - A. Increased efficiency and productivity.
 - B. Reduced efficiency and productivity.
 - C. Lack of product development.
 - D. Slow down the production process.
5. Robots help in dangerous tasks such as:
 - A. Transportation and logistics.
 - B. Handling heavy weights and hazardous chemicals.
 - C. Garden and park maintenance.
 - D. House cleaning.
6.It helps cars determine the distance to other vehicles.
 - A. Sound sensors
 - B. Visible light sensors
 - C. Distance sensors

7. To take pictures and videos, we usesensors:

- A. Sound. B. Touch. C. Light. D. Vision.

8. Power sources used in robots include:

- A. Solar cells only.
B. Batteries, solar cells, and direct power sources.
C. Direct power sources only.
D. Air motors only.

9. The primary function of a sensor is.....

- A. Store data
B. Capture environmental changes and convert them into signals
C. Display images

10. Sensors help robots to.....

- A. Teach them new languages
B. Allowing it to interact with its environment
C. Increase its size

11. A type of sensorused to avoid obstacles.

- A. Light sensors B. Sound sensors C. Distance sensors

12. The first step in the operation of a sensor is.....

- A. Transmitting B. Displaying C. Sensing

13.Commonly used in remote controls.

- A. Ultrasonic sensors B. Infrared sensors C. Light sensors

14. Laser rangefinders are accurate because they use.....

- A. Sound waves B. High frequency waves C. Laser beams

15. A common application of sensors is the use of infrared in.....

- A. Smartphones B. Remote controls C. Vacuum cleaners

16. is a branch of computer science

- A. Scratch B. string C. Artificial intelligence D. motors

17. In which environment are light sensors useful?

- A. In dark rooms
- B. In places with changing lighting conditions
- C. In underwater environments

18. One of the sensors that are used to measure distance using high frequency sound waves.....

- A. Ultrasonic sensors
- B. Laser rangefinders
- C. Motion Sensors

19.Sensors are used to turn on lights when someone enters the room.

- A. Smartphone
- B. Smart car
- C. Smart home lighting system

20.It is used to measure temperature without contact.

- A. Ultrasonic sensor
- B. Infrared sensor
- C. Light sensor

21.The main purpose of the signal conversion step in sensors is.

- A. Sending signals to another device
- B. Converting information into electrical signals
- C. Turning off the sensor

22.is the practical use of motion sensors in games.

- A. Changing the volume
- B. Adjusting the screen brightness
- C. Tracking the movements of players

23. Natural Language Processing enables AI to.....

- A. recognize images
- B. General
- C. perform surgeries
- D. drive cars

24. Factors that determine the choice of a sensor for a particular application.

- A. Device brand
- B. Device color
- C. Environment and required accuracy

25. What is the type that focuses on performing specific tasks?

- A. General Artificial Intelligence (GAI)
- B. Narrow Artificial Intelligence (NAI)
- C. Super Artificial Intelligence (SAI)

26. What field allows artificial intelligence to understand human languages?

- A. Computer Vision
- B. Machine Learning
- C. Natural Language Processing (NLP)

27. Expert system means AI can.....

- A. solve complex problems
- B. make difficult decisions
- C. understand languages
- D. both a and b

28. Which of the following is an example of General Artificial Intelligence (GAI)?

- A. A robot playing chess
- B. A self-driving car
- C. A robot that solves complex problems and adapts to different situations

29. What does Teachable Machine use?

- A. Machine Learning
- B. Natural Language Processing
- C. Expert Systems

30.is a type of sensor used to avoid obstacles

- A. Light sensors
- B. Sound sensors
- C. Distance sensors
- D. Heat sensors

31. What is the most advanced type of artificial intelligence?

- A. General Artificial Intelligence
- B. Narrow Artificial Intelligence
- C. Super AI

32. Which field is used to create robots that operate accurately in dangerous environments?

- A. Machine learning B. Robotics C. Expert systems

33. Which of the following is an application of AI in everyday life?

- A. Personal assistants like Siri B. Cycling C. Hand typing

34. What is Deep Learning?

- A. AI simulating human learning
B. Text translation
C. Image understanding

35. Which field enables AI to make complex decisions such as diagnosing diseases?

- A. Expert systems B. Computer vision C. Natural language processing

36. Robots help in dangerous tasks like.....

- A- Means of transportation and communications.
B- Dealing with heavy weights and Chemical dangerous Materials.
C-Irrigating gardens and parks.
D-House cleaning.

37. What field enables artificial intelligence to recognize images and faces?

- A. Natural Language Processing
B. Computer Vision
C. Deep Learning

38. On production lines, robots can perform repetitive tasks accurately and without any delay, and this leads to.....

- A- Increased efficiency and productivity.
B- Low efficiency and productivity.
C- Lack of product development.
D- The production process is slow.

39. Sensors help robots on.....

- A-Teaching it new languages.
- B-Allowing it to interact with its environment.
- C-Increase its size.
- D-Slowing down its operations.

40. From The common applications For sensors Infrared radiation.....

- A- Smartphones.
- B- Remote controls.
- C-vacuum cleaners.
- D- 3D scanning.

41.Artificial intelligence can solve the problems that it is difficult for Humans to solve it easily and discovering new things we never imagined before.

- A- General.
- B- Narrow.
- C-super.
- D-Precise.

42.Like Siri or Alexa uses artificial intelligence to understand and execute your commands

- A- A personal assistant
- B-Interpreter
- C-Smart Shopping
- D-natural language

43.is an example of General Artificial Intelligence (GAI)

- A. A chess-playing robot
- B. A robot that mimics humans
- C. Siri
- D. None of the previous

44.from applications of artificial intelligence in daily life

- A. Text editor
- B. NumPy
- C. Smart Shopping
- D. Controller

45.is a field of AI that involves learning from mistakes.

- A. Machine Learning
- B. Natural Language Processing
- C. Computer Vision
- D. Robotics

46.is a tool that helps you create models to recognize images, sounds, and movements.

- A. Google Drive
- B. Microsoft Edge
- C. Teachable Machine
- D. Alexa

47. One of the Artificial Intelligence (AI) applications we use in daily life is.....

- A. Calculator
- B. Instant translation
- C. Programming languages
- D. Mobile phone

48.are commonly used in remote controls.

- A. Ultrasonic sensors
- B. Infrared sensors
- C. Light sensors
- D. Motion sensors

49. Laser rangefinders are accurate because they use.....

- A. Sound waves
- B. Visible light
- C. High frequency waves
- D. Laser beams

50. Which of these factors is NOT important when choosing the appropriate type of sensor?

- A. Required range
- B. Required accuracy
- C. Operating environment
- D. Brand popularity

51. In which environment are light sensors useful?

- A. In dark rooms
- B. In noisy factories
- C. In places with variable lighting conditions
- D. In underwater environments

52.sensors are used to turn on lights when someone enters the room.

- A. Smartphone
- B. Smart car
- C. Smart home lighting system
- D. Smart watch

53. Medical robots are known for their.....

- A. entertainment
- B. accuracy
- C. speed
- D. cleaning

54. A benefit of using robots in industry is.....

- A. increasing human errors
- B. reducing productivity
- C. improving accuracy
- D. high costs

55. is the main purpose of the signal conversion step in sensors.

- A. Displaying the results
- B. Sending the signals to another device
- C. Converting the information into electrical signals
- D. Turning off the sensor

56.help cars determine the distance to other vehicles.

- A. Sound sensors
- B. Light sensors
- C. Infrared sensors
- D. Distance sensors

57. The challenges facing robotics technology include.....

- A. the increased reliance on paper documents
- B. the increased reliance on smartphones
- C. safety, employment, and ethics
- D. the increased reliance on traditional machines

58.is a device that can be programmed to perform a set of specific tasks automatically.

- A. Python
- B. Scratch
- C. A robot
- D. A sensor

59.is an example of a home robot.

- A. An industrial robot
- B. A medical robot
- C. Roomba
- D. An educational robot

60.is the main part that carries all the components of the robot.

- A. Motor
- B. Structure
- C. Sensor
- D. Controller

61.make(s) the robot smart, including algorithms to respond to information.

- A. A controller
- B. Software
- C. Motors
- D. Sensors

62. Installing a set of commands in a specific order is.....

- A. code section B. menu bar C. stage area D. sprite

63. Scratch uses..... to create programs.

- A. command lines B. visual blocks
C. text-based files D. audio files

64. Scratch can be downloaded.....

- A. for free B. for a fee
C. with a subscription D. none of them

65. The "Sprite" in Scratch represents a/an.....

- A. background B. object or character
C. command block D. none of them

66. Robots assist in dangerous tasks such as.....

- A. transportation and communication means
B. handling heavy weights and hazardous chemicals
C. irrigating gardens and parks
D. cleaning the house

67.is an educational tool that allows learning the basics of programming in a fun and engaging way, such as programming games and illustrated stories.

- A. Artificial Intelligence B. Scratch
C. Python D. A robot

68. To make the sprite move 30 steps, change the value in the "move" block to.....

- A. 10 B. 30 C. 50 D. 100

69. To make the movement continuous, you can install the "move" commandtime(s).

- A. one B. several C. zero D. none of them

70. To save your project, select Save to your computer from the..... menu.

- A. file B. edit C. delete D. share

71. The file extension for a Scratch project is.....

- A. Docx B. Sb3 C. bmp D. Jpg

72. To stop the project, click on the icon.....

- A- 
B- 
C- 
D- 

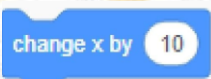
73. If the movement is done quickly, the command used isfrom Control Blocks

- A-Wait. **B- Repeat.** C-Forever. D-Else.

74. The file extension for the scratch file is.....

- A- docx **B- Sb3** C- bmp D- JPEG

75. To demonstrate the implementation of project steps Use the command.....And composite it at the beginning of the code segment.

- A- 
B- 
C- 
D- 

76. To repeat the movement the object we use the command.....

- A- Start** B- Choose Sprite
C- Area Blocks D-Stop

77. To adding sound effects to the object we use the command.....

A- Repeat.

B- Looks.

C- Play sound.

D-Choose a Backdrop.

78. To add a new object Press.....

A- Start

B- Choose Sprite

C- Area Blocks

D-Stop

79. To insert a new background for the project, click on.....

A-Script Area.

B-Stage.

C-Choose Sprite.

D-Choose a Backdrop.

80. The X and Y values in Scratch represent the.....

a. size of the sprite

b. direction of the sprite

c. location of the sprite

d. color of the sprite

81. The "Go to random position" command is found in the.....group

a. Motion

b. Sound

c. Control

d. Events

82. The "Pen" extension is added by clicking on.....

a. Choose Sprite

b. Add Extension

c. Delete Sprite

d. Change Backdrop

83. To draw a geometric shape you need to set the points of the lines.

a. random

b. middle

c. start and end

d. none of them

84. In Scratch, to repeat the movement of an object, we use the command.....

a. Start

b. Repeat

c. stop

d. none of them

85. Matplotlib library is used for.....

a. creating graphs

b. data analysis

c. web development

d. none of them

86. Python can be..... with other languages such as C, C++, and Java.

a. Sprites area

b. File

c. Medical robots

d. integrated

87. Python libraries provide.....

- a. complex codes b. limited functions
c. pre-built codes and functions d. none of them

88. To know the type of the variable statement in Python language, use the function.....

- a. cos () b. type () c. print () d. sin ()

89. In City = "Cairo", the data type of the variable City is.....

- a. Scratch b. string c. AI d. motors

90. In Python, the text value of a variable is written between the signs....

- a. " " b. < > c.() d.{ }

91. The function is used to display texts or values on the output screen.

- a. cos () b. type () c. print () d. sin ()

92. Text editors, like Visual Studio and PyCharm,.....

- a. must be downloaded b. are installed with Python
c. are ignored d. none of them

93. The Python Shell is..... when Python is installed.

- a. downloaded separately b. installed automatically
c. ignored d. none of them

?

Put (✓) or (x)

1. Sensors do not play a role in the movement of robots and sensing the surrounding environment. ()
2. Robots work is limited to factories only. ()
3. Medical robots help doctors perform surgeries. ()
4. The design of the robot's structure affects its weight and ability to move. ()
5. Vision sensors are used to capture sounds. ()

6. The motors used in robots include electric motors and air motors. ()
7. The control unit processes the data collected by the sensors and issues commands to the motors. ()
8. Robots rely on direct power sources only and cannot use batteries or solar cells. ()
9. Robots do not need programs to work. ()
10. Robots use communication tools to interact with users or other robots. ()
11. The areas of use of robots include industry, healthcare, and education. ()
12. Robots cannot be programmed to perform various tasks as needed. ()
13. Robots help reduce risks to human life in hazardous environments. ()
14. Robots are used in agriculture to grow plants manually only. ()
15. The accuracy of robots in tasks such as assembling electronics improves manufacturing quality. ()
16. The first step to operate the sensor is signal conversion. ()
17. Laser distance sensors are considered accurate because they Use Laser beams. ()
18. Light sensors are useful in underwater environments. ()
19. Smart home lighting system it uses sensors to turn on the lights when someone enters the room. ()
20. X-rays - Ultra sound Sensors are used for non-contact temperature measurement. ()
21. Light sensors helps cars determine the distance to other vehicles. ()
22. The design of the structure affects the robot's weight and mobility. ()
23. Robots are limited to working in factories only. ()
24. Motors used in robots are Electric motors and pneumatic motors. ()

25. Medical robots help doctors perform surgeries. ()
26. Control unit processes data collected by the sensors and Commands are issued to the engines. ()
27. Robots do not need to use software in their work. ()
28. artificial intelligence can learn new things slowly ()
29. Self-driving cars rely entirely on artificial intelligence. ()
30. Artificial intelligence is a branch of computer science. ()
31. Artificial intelligence is only one type. ()
32. Artificial intelligence can help doctors diagnose diseases. ()
33. Artificial intelligence is used only in the video game industry. ()
34. Sensors help robots interact with their environment ()
35. The first step in the operation of sensors device is signal conversion. ()
36. Distance sensors helps cars determine the distance to other vehicles ()
37. Ultrasonic sensors emit light waves to measure distance. ()
38. Time of flight sensors measure the time it takes for a light pulse to reach an object and return. ()
39. Choosing the appropriate sensor depends on factors, such as range, accuracy, environment, and cost. ()
40. Light sensors are used in robots that operate in places with constant light. ()
41. Sound sensors are used in robots that react to sounds. ()
42. Motion sensors detect movement and changes in direction. ()
43. The smart lighting system in the home uses sensors to turn on the lights automatically when someone enters the room. ()
44. Sensors do not play a role in the movement of robots and sensing their surrounding environment. ()
45. Vision sensors are used to capture sounds. ()
46. The control unit processes the data collected by the sensors and issues command to the motors ()
47. Robots rely on direct energy sources only and we cannot use batteries or solar cells. ()

48. The areas of use of robots include industry, healthcare, and education. ()
49. The Scratch program provides a very wide range of ideas that can be programmed. ()
50. The Scratch program is considered a difficult educational tool to use. ()
51. In the Scratch program, the student needs to write a lot of complex codes. ()
52. The Scratch program uses a simple visual interface based on a set of Blocks. ()
53. In the Scratch program, the result of the work or project appears in the Blocks area. ()
54. Before executing any project, the objects coordinates on the platform should be y=10, x=10. ()
55. The position of the Sprite can be changed on the stage by double-clicking on it. ()
56. In the Scratch program Students face difficulty sharing projects with others. ()
57. Scratch offers a very wide range of programming ideas. ()
58. To save project from the list File choose Save to your computer ()
59. To Change location of the object Sprite on the platform Double-click on it. ()
60. In order to move the object we use the group Motion from Command Groups Area and select Blocks Area. ()
61. To show Hello On the platform a set of Looks commands is selected then the command. ()
- 
62. The object's position on the platform is determined by the value of the horizontal axis X only. ()
63. The direction of the object's movement can be changed by clicking on the word Direction. ()
64. The object name can only be modified once. ()
65. The object can be deleted from the platform. ()

66. To modify the object's name, click on its current name and rename it. ()
67. Only one object can be added to the platform. ()
68. Using the coordinates(x, y) to determine the location of the point on the stage. ()
69. To Edit object name, Pressure on his current name then Rename it. ()
70. The object name can be modified more than time. ()
71. The object can't be deleted from the platform. ()
72. The horizontal and vertical axes are used to determine Current location of object on the platform. ()
73. Objects used in the project shows in Creatures area (Sprites). ()
74. installation A group of orders in specific order is called The code segment. ()
75. Before implementing the project, value of coordinates for the object on the platform be X-10 and Y-10. ()
76. In the order Wait The waiting value of 1 represents (1 second). ()
77. The object's position on the platform is determined by the value of the horizontal axis X and the vertical axis Y. ()
78. We use drag and drop to handle any command (within) the script area ()
79. To make the movement continuous, you can set the command multiple times. ()
80. The horizontal and vertical axes are used to know the current location of the sprite on the platform. ()
81. To modify the name of the sprite, click on its current name and rename it. ()
82. The direction of the sprite's movement can be changed by clicking on the word "Direction". ()
83. The sprite can be shown or hidden on the platform by clicking Choose Sprite. ()
84. The size of the sprite is changed by its value in the Sprites Area()
85. The sprite can be deleted from the platform. ()
86. Only one sprite can be added to the platform. ()
87. To add a new sprite, click on Choose Sprite. ()

88. The Stop command is used to watch the project execution. ()
89. The "pen down" block makes the pen start drawing. ()
90. A new background is inserted to the project through the programming area. ()
91. The Start command in the Scratch program is used to stop the project. ()
92. We use the coordinates (x, y) to locate the point on the stage. ()
93. To be able to move the object, we use the Motion Blocks from the Area Blocks. ()
94. Python is a free and open-source language, which does not allow anyone to develop it ()
95. It is not possible to create applications and websites using Python ()
96. Python is used in data science and machine learning ()
97. Python is considered an interpreted language because it translates code line by line. ()
98. Python is used in developing web applications, data science, artificial intelligence, machine learning, and game programming. ()
99. Python is one of the most difficult programming languages. ()
100. Python is a versatile language used in game programming. ()
101. Python can be integrated with other languages such as C, C++, and Java. ()
102. One of the disadvantages of Python is the lack of libraries that you can use ()
103. Numpy is a library used in data science, statistics, and artificial intelligence. ()
104. Pandas is a library for data analysis and manipulation in Python. ()
105. Matplotlib is a library for analyzing and processing data ()
106. Variables in programming languages are reserved places in memory to store and save a specific value. ()
107. The value of a variable cannot be changed during the execution of program. ()
108. The variable name must not begin with a letter or an underscore sign (_). ()

109. TAHER, Taher, tahir, TaheR are 4 names for variables in the Python language. ()
110. A variable name contains letters (A-Z), numbers, or an underscore sign (_). ()
111. In Python, when naming variables, reserved words can be used. ()
112. The type () function in Python is used to determine the type of a variable. ()
113. In Y = 10, the statement type of variable Y is numeric for an integer. ()
114. The value of a Boolean variable can be "Yes" or "No". ()
115. In City = "Cairo", the data type of the variable City is a string. ()
116. In Is_tahir_student = False, the statement type of the variable Is_tahir_student is logical. ()
117. To determine the type of a variable, we do not need the type function. ()
118. The texts of variables are placed between single quotation marks ' ' or double quotation marks " ". ()
119. PyCharm is an example of a text editor used for Python programming ()
120. The student's name is classified as numeric value. ()
121. If the value of the variable x is 15 and the value of the variable Y is 350, then the result of the conditional expression (Y > X) is False. ()

مراجعات النخبة

Choose

1	C	2	C	3	D	4	A
5	B	6	B	7	D	8	B
9	B	10	B	11	C	12	C
13	B	14	C	15	B	16	C
17	B	18	A	19	C	20	B
21	B	22	C	23	B	24	C
25	B	26	C	27	D	28	C
29	A	30	C	31	C	32	B
33	A	34	A	35	A	36	B
37	B	38	A	39	B	40	B
41	C	44	A	45	B	44	C
45	A	46	C	47	B	48	B
49	D	50	D	51	C	52	C
53	B	54	C	55	C	56	D
57	C	58	C	59	C	60	B
61	B	62	A	63	B	64	A
65	B	66	B	67	B	68	B
69	B	70	A	71	B	72	B
73	B	74	B	75	D	76	A
77	C	78	B	79	D	80	C
81	A	82	B	83	C	84	B
85	A	86	D	87	C	88	B
89	B	90	A	91	C	92	A
93	B						

Put (✓) or (x)

1	x	2	x	3	✓	4	✓	5	x
6	✓	7	✓	8	x	9	x	10	✓
11	✓	12	x	13	✓	14	x	15	✓
16	x	17	✓	18	x	19	✓	20	x
21	x	22	✓	23	x	24	✓	25	✓

26	✓	27	x	28	x	29	✓	30	✓
31	x	32	✓	33	x	34	✓	35	x
36	✓	37	x	38	✓	39	✓	40	x
41	✓	42	✓	43	✓	44	x	45	x
46	✓	47	x	48	✓	49	✓	50	x
51	x	52	✓	53	x	54	x	55	x
56	x	57	✓	58	✓	59	x	60	✓
61	✓	62	x	63	✓	64	x	65	✓
66	✓	67	x	68	✓	69	✓	70	✓
71	x	72	✓	73	✓	74	✓	75	x
76	✓	77	✓	78	x	79	✓	80	✓
81	✓	82	✓	83	x	84	✓	85	✓
86	x	87	✓	88	x	89	✓	90	x
91	x	92	✓	93	✓	94	x	95	x
96	✓	97	✓	98	✓	99	x	100	✓
101	✓	102	x	103	✓	104	✓	105	x
106	✓	107	x	108	x	109	✓	110	✓
111	x	112	✓	113	✓	114	x	115	✓
116	✓	117	x	118	✓	119	✓	120	x
121	x								

مراجعات النخبة

حمل الآن

مجاناً وحصرياً

المراجعة رقم (3)

الترم الثاني





Final Revision

*(1) Choose the correct answer:

Mr. Ahmed Elbasha

1. artificial intelligence can solve the problems that it is difficult for humans to solve it easily and discovering new things we never imagined before.
a. General. b. Narrow. c. super. d. Precise.
2. Like Siri or Alexa uses artificial intelligence to understand and execute your commands..
a. A personal assistant b. Interpreter
c. Smart Shopping d. natural language
3. Sensors help robots on
a. Teaching it new languages. b. Allowing it interact with environment.
c. Increase its size. d. Slowing down its operations.
4. From The common applications For sensors Using Infrared radiation
a. Smartphones. b. Remote controls.
c. vacuum cleaners. d. 3D scanning.
5. Robots help in dangerous tasks like
a. Means of transportation and communications.
b. Dealing with heavy weights and Chemical dangerous Materials.
c. Irrigating gardens and parks.
d. House cleaning.
6. On production lines, robots can perform repetitive tasks accurately and without any delay, and this leads to
a. Increased efficiency and productivity. b. Low efficiency and productivity.
c. Lack of product development. d. The production process is slow.
7. In the program scratch result of the work or project It appeared in the area
a. Programming Script Area. b. Platform or the theater Stage.
c. Blocks area. d. creatures Sprites.
8. If the movement is done quickly, the command used is from Control Blocks
a. Wait. b. Repeat. c. Forever. d. Else.

9. To add a new object Press

- a. Start b. Choose Sprite c. Area Blocks d. Stop

10.To insert a new background for the project, click on

- a. Script Area. b. Stage.
c. Choose Sprite. d. Choose a Backdrop.

11.The file extension for the scratch file is

- a. docx b. Sb3 c. bmp d. JPEG

12.To adding sound effects to the object we use the command

- a. Repeat. b. Looks.
c. Play sound. d. Choose a Backdrop.

13.From advantages of the Python language is

- a. Open source b. Closed source c. Not free d. Limited use

14.Python translates programming codes line by line which means that

- a. A complex language. b. Interpretive language.
c. Closed source. d. incomplete.

15.The official website of The Python language is

- a. www.python.org b. www.python.edu
c. www.pythonlibr.adp d. www.application.org

16..... It is a library that widely used in data science, statistics, and artificial intelligence.

- a. Pandas b. Matplotlib C. NumPy d. Angular

17..... is a branch of computer science.

- a. Scratch b. String c. AI d. Motor

18.Narrow AI focuses on performing

- a. multiple tasks b. specific tasks c. human-like tasks d. all tasks

19..... AI can solve problems that are difficult for humans to solve.

- a. Narrow b. Play games c. Super d. Accurate

20..... like Siri or Alexa use artificial intelligence to understand your commands.

- a. Personal assistants b. Instant translators
c. Smart shopping sites d. Digital doctors

21..... is an application of artificial intelligence in our daily life.

- a. Text editor b. NumPy c. Smart shopping d. Controller

22..... Artificial Intelligence is a type of AI that can discover new things that we could not have imagined before.

- a. General b. Narrow c. Wide d. Super

23..... devices capture information from the surrounding environment and convert it into electrical signals.

- a. Sensors b. Strings c. Touch screen d. Robotic arm

24..... are types of sensors used to avoid obstacles.

- a. Light sensors b. Sound sensors
c. Distance sensors d. Heat sensors

25.The first step in the operation of the sensor is

- a. transmitting b. displaying c. sensing d. transduction

26.A common application of sensors is the use of infrared in

- a. smartphones b. remote control
c. vacuum cleaners d. 3D scanning

27.One of the sensors that are used to measure distance using high frequency sound waves is

- a. ultrasonic sensors b. laser rangefinders
c. infrared sensors d. motion sensors

28..... sensors are used to turn on lights when someone enters the room

- a. Smartphone b. Smart car
c. Smart home lighting system d. Smart watch

29..... are used for non-contact temperature measurement

- a. Ultrasonic sensors b. Infrared sensors
c. Light sensors d. Motion sensors

30.To measure body temperature without direct contact, use the sensors

- a. ultrasonic b. visible light c. laser d. infrared

31..... is a device that can be programmed to perform a set of specific tasks automatically.

- a. Python b. Scratch c. A robot d. A sensor

32..... are used to move parts of a robot.

- a. Sensors b. Structures c. Motors d. Controllers

33..... is the main part that carries all the components of the robot.

- a. Motor b. Structure c. Sensor d. Controller

34.The is the "brain" of the robot.

- a. structure b. motor c. sensor d. controller

35.The smart vacuum cleaner is a type of robot used for floor cleaning.

- a. industrial b. home c. agricultural d. medical

36.Scratch helps students

- a. make remote controls b. learn the principles of programming
c. 3D scanning d. all of the previous

37.The "Sprite" in Scratch represents a/an

- a. background b. object or character
c. command block d. none of them

38..... is an educational tool that allows learning the basics of programming in a fun and engaging way, such as programming games and illustrated stories.

- a. AI b. Scratch c. Python d. A robot

39.In Scratch, the result of the work or project appears in the

- a. Blocks area b. Stage area c. Script area d. none of them

40.The sprites used in a Scratch project appear in the area.

- a. Sensors b. Bluetooth c. Strings d. Sprites

41.To be able to move the object, we use the from the Blocks Area.

- a. Control b. Pen c. Sound d. Motion

42.Installing a set of commands in a specific order is

- a. code section b. menu bar c. stage area d. sprite

43.To save your project, select Save to your computer from the menu.

- a. file b. edit c. delete d. share

44.The file extension for a Scratch project is

- a. Docx b. Sb3 c. bmp d. Jpg

45..... is a programming language used in data science and machine learning.

- a. Scratch b. Excel c. Python d. PowerPoint

46.Python is programming language.

- a. a free b. an open-source c. difficult d. both a and b

47.Python translates code line by line, which means it is Language.

- a. Personal assistant b. Interpreted
c. Artificial intelligence d. Not integrated

48. Python can be integrated with

- a. C b. C++ c. Java d. all of them

49. is a library widely used in data science, statistics, and artificial intelligence.

- a. Pandas b. Matplotlib c. NumPy d. Angular

50. is a library for analyzing and processing data.

- a. Pandas b. Matplotlib c. NumPy d. Angular

51. Python can be with other languages such as C, C++, and Java.

- a. Sprites area b. File c. medical robots d. integrated

52. To know the type of the variable statement in Python language, use the function

- a. cos () b. type () c. print () d. sin()

53. In City = "Cairo", the data type of the variable City is

- a. Scratch b. string c. AI d. motors

54. In Python, the text value of a variable is written between the signs

- a. " " b. < > c. () d. {}

55. is a data type that contains only 2 values True or False.

- a. Boolean b. Decimal c. String d. Integer

56. One of the common applications of sensors is the use of infrared in

- a. smartphones b. remote controls
c. vacuum cleaners d. 3D scanning

57. uses data science and machine learning.

- a. Word b. Excel c. Python d. PowerPoint

58. like Siri or Alexa use artificial intelligence to understand your commands.

- a. Personal assistants b. Instant translators
c. Smart shopping sites d. Digital doctors

59. The file extension for a Scratch project is

- a. Docx b. Sb3 c. bmp d. Jpg

60. are used to avoid obstacles.

- a. Light sensors b. Sound sensors
c. Distance sensors d. Heat sensors

61. A new background for the project is inserted in the Scratch program by pressing

- a. Choose a Backdrop b. Script Area
c. Stage d. Choose Sprite

62.To add a new object, press on

- a. Choose Sprite b. Start c. Repeat d. Play sound

63.One of the advantages of Python is that it is

- a. open-source b. closed source c. not free d. limited use

64.The official website of Python is

- a. www.python.org b. www.python.edu
c. www.pythonlibr.adp d. www.application.org

65..... is a library for data analysis and manipulation.

- a. Pandas b. Matplotlib c. NumPy d. Angular

66.The function is used to display texts or values on the output screen.

- a. Cos () b. Type () c. Print () d. Sin ()

67.To measure body temperature without direct contact, use the sensors.

- a. ultrasonic b. visible light c. laser d. infrared

68.To repeat the object's movement many times on the stage in Scratch program, use

- a. Repeat b. Move c. Wait d. Delete

69.The smart vacuum cleaner is a type of robot used for floor cleaning

- a. industrial b. household (domestic)
c. agricultural d. medical

70.Robots help in carrying out some dangerous tasks such as

- a. dismantling bombs b. mountain climbing
c. cleaning homes d. manufacturing electronics

71.The Scratch program uses a simple visual interface based on a set of placed on top of each other in a specific order to create programs.

- a. Blocks b. Sprites c. Events d. Motions

72.In programming languages, represent a reserved location in memory for storing a specific value that can change during program execution.

- a. Constants b. Events c. Variables d. Functions

73..... Artificial Intelligence is a type of AI that can discover new things that we could not have imagined before.

- a. General b. Narrow c. Broad/Wide d. Super

74.In the Scratch program, commands or blocks are moved in the area.

- a. Script/Programming area b. Stage area
c. Sprites area d. Menu bar

75.The Scratch program helps the student to

- a. Remote controls
- b. Learn the principles of programming
- c. 3D scanning
- d. All of the above

76.A common application of sensors is the use of infrared in

- a. Smartphones
- b. Remote controls
- c. Vacuum cleaners
- d. 3D scanning

77.If the movement is too fast, the command from Control Blocks is used.

- a. Wait
- b. Repeat
- c. Forever
- d. Else

78.To take pictures and videos, we use sensors

- a. Sound
- b. Touch
- c. Light
- d. Vision

79.Sensors help robots to

- a. Teach them new languages
- b. interact with their environment
- c. Increase their size
- d. Slow down their operations

80.One of the advantages of the Python language is that it is

- a. Open-source
- b. Closed source
- c. Paid
- d. Limited

81.Robots assist in dangerous tasks such as

- a. Transportation and communication means
- b. Handling heavy weights and hazardous chemicals
- c. Irrigating gardens and parks
- d. Cleaning the house

82.The sprite in Scratch represents the

- a. background
- b. object or character
- c. command block
- d. File menu

*** (2) Put (√) or (X) :**

- | | |
|--|--------|
| 1. Artificial intelligence can learn new things slowly | () |
| 2. Self-driving cars rely entirely on artificial intelligence. | () |
| 3. Artificial intelligence is a branch of computer science. | () |
| 4. Artificial intelligence is only one type. | () |
| 5. Artificial intelligence can help doctors diagnose diseases. | () |
| 6. Artificial intelligence is used only in the video game industry. | () |
| 7. The first step to operate the sensor is signal conversion. | () |
| 8. Laser distance sensors are considered accurate because they Use Laser beams. | () |
| 9. Light sensors are useful in underwater environments. | () |
| 10. Smart home lighting system it uses sensors to turn on the lights when someone enters the room. | () |
| 11. X-rays Ultra sound Sensors are used for non-contact temperature measurement. | () |
| 12. Light sensors helps cars determine the distance to other vehicles. | () |
| 13. The design of the structure affects the robot's weight and mobility. | () |
| 14. Robots are limited to working in factories only. | () |
| 15. Motors used in robots are Electric motors and pneumatic motors . | () |
| 16. Medical robots help doctors perform surgeries. | () |
| 17. Control unit processes data collected by the sensors and Commands are issued to the engines. | () |
| 18. Robots do not need to use software in their work. | () |
| 19. The student needs scratch program to writing a lot of complex code. | () |
| 20. Scratch is considered a difficult-to-use educational tool. | () |
| 21. In the Scratch program the code displays in the stage area | () |
| 22. Scratch paid software. | () |
| 23. Scratch uses a visual interface based on blocks. | () |
| 24. The Scratch program helps students learn the basics of programming. | () |
| 25. In the Scratch program Students face difficulty sharing projects with others. | () |
| 26. Scratch offers a very wide range of programming ideas. | () |

ICT	Second Term 2025/2026	Prep.1
27.To save project from the list File choose Save to your computer	()	
28.To Change location of the object Sprite on the platform Double-click on it.	()	
29.In order to move the object we use the group Motion from Command Groups Area and select Blocks Area	()	
30.The object's position on the platform is determined by the value of the horizontal axis X only.	()	
31.Direction of the object's movement can be changed by clicking on word Direction.	()	
32.The object name can only be modified once.	()	
33.The object can be deleted from the platform.	()	
34.To modify the object's name, click on its current name and rename it.	()	
35.Only one object can be added to the platform.	()	
36.Installation A group of orders in specific order is called the code segment.	()	
37.Before implementing the project, value of coordinates for the object on the platform be X=10 and Y=10.	()	
38.In the order Wait The waiting value of 1 represents (1 second).	()	
39.The object's position on the platform is determined by the value of the horizontal axis X and the vertical axis Y.	()	
40.We use drag and drop to handle any command (within) the script area.	()	
41.To make the movement continuous, you can set the command multiple times	()	
42.Using the coordinates(x, y) to determine the location of the point on the stage	()	
43.To Edit object name ,Pressure on his current name then Rename it	()	
44.The object name can be modified more than time	()	
45.The object can't be deleted from the platform	()	
46.The horizontal and vertical axes are used to determine Current location of object on the platform	()	
47.Objects used in the project shows in Creatures area (Sprites)	()	
48.Python language is one of hardest programming languages	()	
49.Python language uses data science and Machine Learning	()	

50. Python is an interpreted language because translate codes, that software is programmed line by line. ()
51. It is impossible to create applications and websites using the Python language. ()
52. Python is a free and open-source language, so no one can develop it. ()
53. Python is used in Web application development, data science, artificial intelligence, machine learning, and game programming. ()
54. NumPy: A library used in data science, statistics, and artificial intelligence. ()
55. One of the drawbacks of the Python language is its limited functionality Libraries you can use. ()
56. It can be merged Python language with other languages such as C, C++, and Java. ()
57. Pandas: A library for analyzing and processing data. ()
58. When installing a Python application, you must choose 64-bit or 32-bit, depending on your device's specifications ()
59. Matplotlib: A library for analyzing and processing data. ()
60. Personal assistants like Siri are some of the AI applications ()
61. Artificial intelligence can help doctors diagnose diseases. ()
62. Self-driving cars rely entirely on artificial intelligence. ()
63. Artificial intelligence is only one type. ()
64. Narrow artificial intelligence can perform any task that a human can perform. ()
65. General artificial intelligence is more advanced. ()
66. Super artificial intelligence focuses on solving specific problems. ()
67. Smart shopping gives you suggestions for products you might like. ()
68. Sensors help robots interact with their environment. ()
69. The first step in the operation of the sensor device is signal conversion. ()
70. Distance sensors help cars determine the distance to other vehicles. ()
71. The smart lighting system in the home uses sensors to turn on the lights automatically when someone enters the room. ()
72. The robots work is limited to factories only. ()
73. Medical robots help doctors perform surgeries. ()

74.The controller is the industrial muscles of robots.	()
75.The motors used in robots include electric motors and air (pneumatic) motors.	()
76.Robots use communication tools to interact with users or other robot.	()
77.The Scratch program helps the student learn the principles of programming.	()
78.The Scratch program is considered a difficult educational tool to use	()
79.The Scratch program is characterized as being a free program.	()
80.In the Scratch program, the student needs to write a lot of complex codes.	()
81.The Scratch program uses a simple visual interface based on a set of Blocks.	()
82.In the Scratch program, students face difficulties in sharing projects with others.	()
83.The sprites used in the project appear in the Sprites area.	()
84.Python is a free & open-source language and does not allow anyone to develop it.	()
85.It is not possible to create applications and websites using Python.	()
86.Python is used in data science and machine learning.	()
87.Python is one of the most difficult programming languages.	()
88.Python can be integrated with other languages such as C, C++, and Java.	()
89.One of the disadvantages of Python is the lack of libraries that you can use.	()
90.Numpy is a library used in data science, statistics, and artificial intelligence.	()
91.Pandas is a library for data analysis and manipulation in Python.	()
92.The variable name must not begin with a letter or an underscore sign.	()
93.In Python, when naming variables, reserved words can be used.	()
94.To determine the type of a variable, we do not need the type function.	()
95.The motors used in robots include electric motors and air motors.	()
96.Narrow artificial intelligence can perform any task that a human can perform.	()
97.To determine the type of a variable, we do not need the type () function.	()
98.In the wait command, the value of waiting represents 1 second.	()
99.In Scratch, the horizontal and vertical axis are used to know the current location of the object on the platform .	()
100. To make movement continuous, you can assemble the command several times	()

101. The design of the structure affects the weight of the robot and its ability to move.	()
102. The first step in the operation of sensors is transmission.	()
103. The Start command in the Scratch program is used to stop the project	()
104. A robot is a device that can be programmed to perform a set of tasks automatically.	()
105. The direction of the sprite in the Scratch program is determined by changing the values of the horizontal (X) and vertical (Y) axes .	()
106. Variables in programming languages are a reserved place in memory to store and save a specific value	()
107. Python is used in developing web applications, data science, artificial intelligence, machine learning, and game programming	()
108. In the Scratch program, the student needs to write a lot of complex codes	()
109. Scratch uses a visual interface based on blocks	()
110. Python is an interpreted language because it translates codes line by line	()
111. Robots do not need to use software to operate	()
112. The object can be deleted from the stage	()
113. Matplotlib is a library for analyzing and processing data	()
114. Artificial intelligence is only one type	()
115. In Python the NumPy library is widely used in data science, statistics, and AI.	()
116. The sprite name can be modified only once	()
117. Remote control is example of infrared sensors	()
118. Python is a free and closed source programming language	()
119. To be able to move the object, we use the Motion Blocks from the Area Blocks	()
120. From artificial intelligence fields Machine Learning	()
121. Sensors help robots to allow them to interact with their environment	()
122. Only one sprite can be added to the platform	()
123. Robotics do not need to use software in their work	()

(3) Complete the following statement using guiding words:*1. (Sensing - Stage Area - NumPy - Smart Shopping - Controller)**

1. is the "brain" of the robot.
2. is a library widely used in data science, statistics, and artificial intelligence.
3. it shows the result of the work or project.
4. from applications of artificial intelligence in daily life.
5. The first step in the operation of the sensor is

2. (Remote controls - Sb3 - Open source - Stage area)

1. One of the advantages of Python is that it
2. One of the Common applications of sensors is the use of infrared in
3. In the Scratch program, the result of the work or project appears in the
4. The file extension for Scratch project is

3. (Python – Scratch – Robot – Sensor – Variable)

1. is a device that sense changes in the surrounding environment.
2. is a reserved place in memory to store and save a specific value.
3. is a fun educational tool allows learning the programming in a visual way.
4. is a device that can be programmed to perform a set of specific tasks automatically.
5. is a programming language used in data science and machine learning.

4. (Medical robots - integrated - Self driving cars)

1. help doctors performing surgeries.
2. Python can be with other languages such as C, C++, and Java.
3. rely entirely on artificial intelligence.

5. (Scratch - Sensors - string - motors)

1. The program helps the student learn the principles of programming.
2. The used in robots include electric and pneumatic.
3. City = "Cairo", the data type of the variable City is a
4. devices capture information from the surrounding environment and convert it into electrical signals.

Model Answer

*(1) Choose the correct answer:

1. C	11. B	21. C	32. C	43. A	54. A	65. A	76. B
2. A	12. C	22. D	33. B	44. B	55. A	66. C	77. A
3. B	13. A	23. A	34. D	45. C	56. B	67. D	78. D
4. B	14. B	24. C	35. B	46. D	57. C	68. A	79. B
5. B	15. A	25. C	36. B	47. B	58. A	69. B	80. A
6. A	16. C	26. A	37. B	48. D	59. B	70. A	81. B
7. B	17. C	27. A	38. B	49. C	60. C	71. A	82. B
8. A	18. B	28. C	39. B	50. A	61. A	72. C	
9. B	19. C	29. B	40. D	51. D	62. A	73. D	
10. D	20. A	30. D	41. D	52. B	63. A	74. A	
		31. C	42. A	53. B	64. B	75. B	

*(2) Put (√) or (X) :

1. (X)	19. (X)	37. (X)	55. (X)	73. (√)	92. (X)	111. (X)
2. (√)	20. (X)	38. (√)	56. (√)	74. (X)	93. (X)	112. (√)
3. (√)	21. (X)	39. (√)	57. (√)	75. (√)	94. (X)	113. (X)
4. (X)	22. (X)	40. (√)	58. (√)	76. (√)	95. (√)	114. (X)
5. (√)	23. (√)	41. (√)	59. (X)	77. (√)	96. (√)	115. (√)
6. (X)	24. (√)	42. (√)	60. (√)	78. (X)	97. (X)	116. (X)
7. (X)	25. (X)	43. (√)	61. (√)	79. (√)	98. (√)	117. (√)
8. (√)	26. (√)	44. (√)	62. (√)	80. (X)	99. (√)	118. (X)
9. (X)	27. (√)	45. (X)	63. (X)	81. (√)	100. (√)	119. (√)
10. (√)	28. (X)	46. (√)	64. (X)	82. (X)	101. (√)	120. (√)
11. (X)	29. (√)	47. (√)	65. (X)	83. (√)	102. (√)	121. (√)
12. (X)	30. (X)	48. (X)	66. (X)	84. (X)	103. (X)	122. (X)
13. (√)	31. (√)	49. (√)	67. (√)	85. (X)	104. (√)	123. (X)
14. (X)	32. (X)	50. (√)	68. (√)	86. (√)	105. (X)	
15. (√)	33. (√)	51. (X)	69. (X)	87. (X)	106. (√)	
16. (√)	34. (√)	52. (X)	70. (√)	88. (√)	107. (√)	
17. (√)	35. (X)	53. (√)	71. (√)	89. (X)	108. (X)	
18. (X)	36. (√)	54. (√)	72. (X)	90. (√)	109. (√)	
				91. (√)	110. (√)	

*(3) Complete the following statement using guiding words:

1	2	3	4	5
1. Controller 2. NumPy 3. Stage Area 4. Smart Shopping 5. Sensing	1. Open source 2. Stage area 3. Remote controls 4. Sb3	1. Sensor 2. Variable 3. Scratch 4. Robot 5. Python	1. Medical robots 2. Integrated 3. Self driving cars	1. Scratch 2. Motors 3. String 4. Sensors

حمل الآن

مجاناً وحصرياً

المراجعة رقم (4)

الترم الثاني

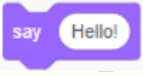




A. Put(✓) Or (X):-

1. artificial intelligence can learn new things slowly ()
2. Self-driving cars rely entirely on artificial intelligence. ()
3. Artificial intelligence is a branch of computer science. ()
4. Artificial intelligence is only one type. ()
5. Artificial intelligence can help doctors diagnose diseases. ()
6. Artificial intelligence is used only in the video game industry. ()
7. The first step to operate the sensor is signal conversion. ()
8. Laser distance sensors are considered accurate because they use laser beams. ()
9. Light sensors are useful in underwater environments. ()
10. Smart home lighting system it uses sensors to turn on the lights when someone enters the room. ()
11. X-rays Ultra sound Sensors are used for non-contact temperature measurement ()
12. Light sensors helps cars determine the distance to other vehicles. ()
13. The design of the structure affects the robot's weight and mobility. ()
14. Robots are limited to working in factories only. ()
15. Motors used in robots are Electric motors and pneumatic motors. ()
16. Medical robots help doctors perform surgeries. ()
17. Control unit processes data collected by the sensors and Commands are issued to the engines. ()
18. Robots do not need to use software in their work. ()
19. The student needs scratch program to writing a lot of complex code. ()
20. Scratch is considered a difficult—to-use educational tool. ()



21. In the Scratch program the code displays in the stage area ()
22. Scratch paid software. ()
23. Scratch uses a visual interface based on blocks. ()
24. The Scratch program helps students learn the basics of programming ()
25. In the Scratch program Students face difficulty sharing projects with others. ()
26. Scratch offers a very wide range of programming ideas. ()
27. To save project from the list File choose Save to your computer ()
28. To Change location of the object Sprite on the platform Double-click on it. ()
29. In order to move the object we use the group Motion from Command Groups Area and select Blocks Area. ()
30. To show Hello On the platform a set of Looks commands is selected then the command  ()
31. The object's position on the platform is determined by the value of the horizontal axis X only. ()
32. The direction of the object's movement can be changed by clicking on the word Direction ()
33. The object name can only be modified once. ()
34. The object can be deleted from the platform. ()
35. To modify the object's name, click on its current name and rename it. ()
36. Only one object can be added to the platform ()
37. installation A group of orders in specific order is called The code segment. ()
38. Before implementing the project, value of coordinates for the object on the platform be X=10 and Y=10. ()



39. In the order Wait The waiting value of 1 represents (1 second). ()
40. The object's position on the platform is determined by the value of the horizontal axis X and the vertical axis Y. ()
41. We use drag and drop to handle any command (within) the script area ()
42. To make the movement continuous, you can set the command multiple times. ()
43. Using the coordinates(x, y) to determine the location of the point on the stage. ()
44. To Edit object name, Pressure on his current name then Rename it. ()
45. The object name can be modified more than time. ()
46. The object can't be deleted from the platform. ()
47. The horizontal and vertical axes are used to determine Current location of object on the platform. ()
48. Objects used in the project shows in Creatures area (Sprites). ()
49. Python language is one of hardest programming languages. ()
50. Python language uses data science and Machine Learning. ()
51. Python is an interpreted language because translate codes, that software is programmed line by line. ()
52. It is impossible to create applications and websites using the Python language. ()
53. Python is a free and open-source language, so no one can develop it. ()
54. Python is used in Web application development, data science, artificial intelligence, machine learning, and game programming ()



B. Choose the correct answer

1-Artificial intelligence can solve the problems that it is difficult for Humans to solve it easily and discovering new things we never imagined before.

A- General. B- Narrow. C- super. D- Precise.

2- Like Siri or Alexa uses artificial intelligence to understand and execute your commands..

A- A personal assistant

B- Interpreter

C- Smart Shopping

D- natural language

3 – Sensors help robots on.....

A-Teaching it new languages.

B-Allowing it to interact with its environment.

C-Increase its size.

D-Slowing down its operations.

4-From The common applications For sensors Using Infrared radiation.....

A- Smartphones.

B- Remote controls.

C- vacuum cleaners.

D-3D scanning.

5- Robots help in dangerous tasks like.....

A-Means of transportation and communications.

B-Dealing with heavy weights and Chemical dangerous Materials.

C-Irrigating gardens and parks.

D-House cleaning.

6-On production lines, robots can perform repetitive tasks accurately and with out any delay, and this leads to...

A-Increased efficiency and productivity.

B-Low efficiency and productivity.

C-Lack of product development.

D-The production process is slow



7- To run the project, click on the icon.

A-



C-



B-



D-



8- In the program scratch result of the work or project It appeared in the area.....

A- Programming Script Area.

B- Platform or the theater Stage.

C- Blocks area.

D- creatures Sprites.

9- To stop the project, click on the icon.....

A-



B-



C-



D-



10- If the movement is done quickly, the command used is.....from Control Blocks

A- Wait.

B- Repeat.

C- Forever.

D- Else.

11-To add a new object Press.....

a- Start

b- Choose Sprite

c- Area Blocks

d- Stop

12-To insert a new background for the project, click on.....

a- Script Area.

b- Stage.

c- Choose Sprite.

d- Choose a Backdrop.

13-The file extension for the scratch file is.....

a- docx

b- Sb3

c- bmp

d- JPEG

14- To demonstrate the implementation of project steps Use the

command.....And composite it at the beginning of the code segment

a- change x by 10

b- move 10 steps

c- wait 1 seconds

d- when clicked



15- To repeat the movement the object we use the command.....

a- Start

b- Choose Sprite

c- Area Blocks

d -Stop

16- To adding sound effects to the object we use the command.....

a- Repeat

b- Looks

c- Play sound

d-Choose a Backdrop

17- From advantages of the Python language is.....

a-Open source

b-Closed source

c-Not free

d- Limited use

18- Python translates programming codes line by line which means that.....

a-A complex language

b-Interpretive language

c-Closed source

d-incomplete





A. Put(✓) Or (X):–

1. artificial intelligence can learn new things slowly (X)
2. Self-driving cars rely entirely on artificial intelligence. (X)
3. Artificial intelligence is a branch of computer science. (✓)
4. Artificial intelligence is only one type. (X)
5. Artificial intelligence can help doctors diagnose diseases. (✓)
6. Artificial intelligence is used only in the video game industry. (X)
7. The first step to operate the sensor is signal conversion. (X)
8. Laser distance sensors are considered accurate because they use laser beams. (✓)
9. Light sensors are useful in underwater environments. (✓)
10. Smart home lighting system it uses sensors to turn on the lights when someone enters the room. (✓)
11. X-rays Ultra sound Sensors are used for non-contact temperature measurement (X)
12. Light sensors helps cars determine the distance to other vehicles. (X)
13. The design of the structure affects the robot's weight and mobility. (✓)
14. Robots are limited to working in factories only. (X)
15. Motors used in robots are Electric motors and pneumatic motors. (✓)
16. Medical robots help doctors perform surgeries. (✓)
17. Control unit processes data collected by the sensors and Commands are issued to the engines. (✓)
18. Robots do not need to use software in their work. (X)
19. The student needs scratch program to writing a lot of complex code. (X)
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21. In the Scratch program the code displays in the stage area

(X)

22. Scratch paid software.

(X)

24. Scratch uses a visual interface based on blocks.

(V)

25. The Scratch program helps students learn the basics of programming

(V)

26. In the Scratch program Students face difficulty sharing projects with others.

(X)

27. Scratch offers a very wide range of programming ideas.

(V)

28. To save project from the list File choose Save to your computer

(V)

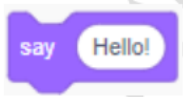
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(X)

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(V)

31. To show Hello On the platform a set of Looks commands is selected then the command



(V)

32. The object's position on the platform is determined by the value of the horizontal axis X only.

(X)

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(V)

34. The object name can only be modified once.

(X)

35. The object can be deleted from the platform.

(V)

36. To modify the object's name, click on its current name and rename it.

(V)

37. Only one object can be added to the platform

(X)

38. installation A group of orders in specific order is called The code segment.

(V)

39. Before implementing the project, value of coordinates for the object on the platform be X=10 and Y=10.

(X)



39. In the order Wait The waiting value of 1 represents (1 second). (✓)
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42. To make the movement continuous, you can set the command multiple times. (✓)
43. Using the coordinates(x, y) to determine the location of the point on the stage. (✓)
44. To Edit object name, Pressure on his current name then Rename it. (✓)
45. The object name can be modified more than time. (✓)
46. The object can't be deleted from the platform. (✗)
47. The horizontal and vertical axes are used to determine Current location of object on the platform. (✓)
48. Objects used in the project shows in Creatures area (Sprites). (✓)
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50. Python language uses data science and Machine Learning. (✓)
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53. Python is a free and open–source language, so no one can develop it. (✗)
54. Python is used in Web application development, data science, artificial intelligence, machine learning, and game programming (✓)



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- A- Increased efficiency and productivity.
B- Low efficiency and productivity.
C- Lack of product development.
D- The production process is slow



7- To run the project, click on the icon.

B-



E-



B-



D-



8- In the program scratch result of the work or project It appeared in the area.....

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B- Platform or the theater Stage.

C- Blocks area.

F- creatures Sprites.

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B-



B-



C-



D-



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c- Playsound

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كيفية طباعة صفحات معينة من ملف معين مثلا ازاي نطبع الصفحات من صفحة 4 الى صفحة 9

